

## REMARKS

The rejections of the claims 35 U.S.C. §§ 102(b) and 103(a) over Clark, Takahashi, the combination of Clark and Baumann, the combination of Takahashi and Baumann, the combination of Clark and Goetz, and the combination of Takahashi and Goetz are respectfully traversed. None of the applied references describe an ultraphobic surface having the claimed surface topology.

All of the above rejections rely on either Clark or Takahashi as inherently describing a structured surface having the claimed surface topography (Official Action issued August 8, 2002, page 5, paragraph 4, and page 6, paragraph 2).

However, Applicants' Declaration shows that surfaces describe in the prior art, which have contact angles in excess of 150° and provide roll off of water droplets at the "slightest inclination of the substrate" (i.e., Clark at column 6, lines 52-53) do not *necessarily* possess the claimed surface topography. In other words, the Declaration shows that surfaces which do not have the claimed surface topography (i.e., Examples 1, 7, 8, and 10 of Clark) can have ultraphobic properties. Applicants respectfully submit that once it has been shown that ultraphobic surface properties do not depend on the claimed surface topography, the Examiner can no longer assert that the claimed surface topography is *inherent* to ultraphobic surfaces. Thus, Applicants' Declaration is sufficient to show that neither Clark nor Takahashi inherently describe the claimed surface topography. Accordingly, since Clark and Takahashi neither expressly nor inherently describe the claimed surface topography, Clark and Takahashi fail to anticipate the claimed surface.

Moreover, because neither Clark nor Takahashi expressly or inherently describe a surface having the claimed topography, as discussed above, the Examiner has failed to support a *prima facie* case of obviousness, since none of the applied references in

combination with Clark or Takahashi “teach or suggest all the claim limitations” (M.P.E.P. § 21143). Accordingly, none of the applied references, either individually or in combination suggest the claimed invention.

The Examiner states that a “persuasive declaration would have to overcome the teachings found throughout the references, not just the examples shown by the reference.” However, as discussed above, if it can be shown that any surface having ultraphobic properties does not have the claimed surface topography, it would logically follow that the ultraphobic surface properties do not *necessarily* require the claimed surface topography, unless there is an express disclosure otherwise. Applicants therefore respectfully submit that the Declaration is sufficient to show that surfaces having ultraphobic properties do not inherently possess the claim surface topography.

The Office also states that “Applicant cannot rely on evidence taken using the examples in Clark et al to overcome the teachings of Takahashi et al.” As discussed above, the Examiner assumes that because the surfaces of Takahashi possess ultraphobic properties, these surfaces must inherently possess the claimed surface topography. However, Applicants’ Declaration shows that surfaces which have ultraphobic properties do not inherently possess the claimed surface topography. Thus, the Examiners assumption that the claimed surface topography is inherent to the surfaces of Takahashi is incorrect. Thus, Applicants respectfully submit that no further evidence must be provided in order to overcome Takahashi.

In addition, Table 1 at page 40 of the specification shows that that the claimed range of values of the integral of function S provides significantly improved contact angles compared to otherwise similar surfaces having values of the integral function S outside the claimed range. Thus, the claimed range of values of the integral of function S is result-effective in regard to the properties (i.e., contact angle) of the surface. None of the applied

references recognize the importance of a surface topology in which the value of the integral of function S falls within the claimed range. Thus, as a matter of law, it would not be obvious to modify the surfaces of Clark or Takahashi to provide the claimed surface. M.P.E.P. 2144.05(II)(B). Accordingly, the applied references, either individually or in combination, fail to suggest the claimed invention.

The Examiner states that he is “not fully confident that the computer modeling in the Declaration is an accurate representation of the examples in Clark et al” and that he is “unsure how any necessary parameters were modeled since the Applicant did not actually make the invention from which the data was gleaned” (page 4, paragraph 2 of the outstanding Official Action). However, Applicants note that paragraph 1 of Applicants’ Declaration states that the “given structure of the nanostructure elements [of Clark] *can be modeled sufficiently accurate[ly]*” (emphasis added). Thus, Applicants have expressly stated that the data found in Clark, and the method employed by Applicants is sufficient to accurately model the surface topography of the examples of Clark. The Examiner has failed to provide any evidence refuting Applicants’ statement that the modeling data of the Declaration is sufficient to show that the surfaces of Clark lack the claimed surface topography. Thus, the Examiner’s opinion regarding the sufficiency of the Declaration is not adequately supported by objective evidence. Accordingly, Applicants’ express statement regarding the sufficiency of the modeling data of the Declaration must be presumed correct.

Accordingly, since Applicants have shown that the claim surface topography is not necessarily present in the surfaces of Clark or Takahashi, none of the applied references either anticipate or suggest the claimed invention. Applicants therefore respectfully request that the rejections be withdrawn.

The rejection of the claims under 35 U.S.C. § 112, first paragraph is respectfully traversed. The Examiner has already stated that the specification is “enabling for the product

made in the examples in the specification, and therefore Applicants respectfully submit that the claimed invention is sufficiently “enabled” by the specification.

The Examiner also states that the specification “does not reasonably provide enablement for *any and every* surface having the claimed properties” (emphasis added). However, Applicants respectfully submit that the Examiner has applied an incorrect legal standard. M.P.E.P. § 2164.01(b) states that “as long as the specification discloses *at least one method* for making and use the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. § 112 is satisfied” (emphasis added). Applicants have described significantly more than one method of making and using the claimed invention. The Examples of the specification describe various different methods for preparing a surface having the claimed surface topography (e.g., by etching or deposition of fine particles), and provide examples of various oleophobic and hydrophobic materials. Furthermore, the specification provides a detailed description at pages 28-29, of methods for determining surface topography. Moreover, Applicants respectfully submit that one of ordinary skill in the art would reasonably understand, based on the ample description and examples of the present specification, how to make and use the claimed invention. Accordingly, Applicants respectfully submit that the claimed invention is enabled under the standard discussed in M.P.E.P. § 2164.01(b). Applicants therefore request that the rejection be withdrawn.

Accordingly, and for the reasons stated above, Applicants respectfully request that the rejections be withdrawn. Applicants respectfully submit that the present application is now in condition for allowance, and early notification thereof is earnestly solicited.

Respectfully Submitted,

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